Amendments to the Claims

Please amend the claims as follows:

1-20.(Canceled)

21. (Previously Presented) A specimen enclosure assembly for use in an electron microscope and comprising:

a specimen enclosure dish having an aperture and defining an enclosed specimen placement volume;

an electron beam permeable, fluid impermeable, cover sealing said specimen placement volume at said aperture from a volume outside said specimen enclosure assembly; and

a pressure controller communicating with said enclosed specimen placement volume, said pressure controller being configured for maintaining said enclosed specimen placement volume at a pressure which exceeds a vapor pressure of a sample in said specimen placement volume and is greater than a pressure of a volume outside said specimen enclosure assembly, wherein a pressure differential across said cover does not exceed a threshold level at which rupture of said cover would occur.

22. (Previously Presented) A specimen enclosure assembly according to claim 21 and wherein said specimen enclosure dish is a rigid specimen enclosure dish.

23. (Previously Presented) A specimen enclosure assembly according to claim 21 and wherein said pressure controller comprises a passageway communicating with said enclosed specimen placement volume.

24. (Previously Presented) A specimen enclosure assembly according to claim 23 and wherein said passageway comprises a fluid conduit having a lumen whose cross section is sufficiently small so as to maintain said pressure, which exceeds said vapor pressure of said sample in said specimen placement volume and is greater than said pressure of said volume outside said

specimen enclosure assembly.

25. (Previously Presented) A specimen enclosure assembly according to claim 24 and wherein said fluid conduit comprises a tube.

26. (Previously Presented) A specimen enclosure assembly according to claim 24 and wherein said lumen of said fluid conduit has a circular cross section having a diameter in the range of 50-150 micrometers.

27. (Previously Presented) A specimen enclosure assembly according to claim 24 and wherein said fluid conduit communicates with a fluid reservoir.

28. (Previously Presented) A specimen enclosure assembly according to claim 27 and wherein said fluid reservoir comprises at least one fluid channel in fluid communication with said fluid conduit and a passageway formed in said fluid reservoir for fluid communication with said volume outside said specimen enclosure assembly.

29. (Previously Presented) A specimen enclosure assembly according to claim 28 and wherein said fluid channel of said fluid reservoir comprises at least one tube.

30. (Previously Presented) A specimen enclosure assembly according to claim 28 and wherein said passageway formed in said fluid reservoir comprises a fluid conduit having a lumen whose cross section is sufficiently small so as to maintain a pressure, which exceeds said vapor pressure of said sample in said specimen placement volume and is greater than said pressure of said volume outside said specimen enclosure assembly and said fluid reservoir.

31. (Previously Presented) A specimen enclosure assembly according to claim 21 and also comprising a fluid ingress and egress assembly permitting supply and removal of fluid from said enclosed specimen placement volume.

32. (Previously Presented) A specimen enclosure assembly according to claim 31 and wherein said fluid ingress and egress assembly comprises at least two fluid conduits.

33. (Currently Amended) A specimen enclosure assembly according to claim 32 and wherein at least one of said at least ~~one~~ two fluid ~~conduit~~ conduits of said fluid ingress and egress assembly comprises at least ~~two tubes~~ one tube.

34. (Previously Presented) A method for constructing a specimen enclosure assembly for use in a scanning electron microscope comprising:

providing a specimen enclosure dish having an aperture and defining an enclosed specimen placement volume;

attaching an election beam permeable, fluid impermeable, cover to said specimen placement volume at said aperture for sealing said aperture from a volume outside said specimen enclosure assembly; and

providing a pressure controller communicating with said enclosed specimen placement volume, said pressure controller being configured for maintaining said enclosed specimen placement volume at a pressure, which exceeds a vapor pressure of a sample in said specimen placement volume and is greater than a pressure of a volume outside said specimen enclosure assembly, wherein a pressure differential across said cover does not exceed a threshold level at which rupture of said cover would occur.

35. (Previously Presented) A method according to claim 34 and wherein said providing said pressure controller comprises forming in said specimen enclosure assembly a passageway communicating with said volume outside said specimen enclosure assembly.

36. (Previously Presented) A method according to claim 35 and wherein said providing said pressure controller comprises sealingly attaching to said passageway a fluid conduit having a lumen whose cross section is sufficiently small to maintain said pressure, which exceeds said

vapor pressure of said sample in said specimen placement volume and is greater than said pressure of said volume outside said specimen enclosure assembly.

37. (Previously Presented) A method according to claim 36 wherein said fluid conduit comprises at least one tube.

38. (Currently Amended) A method according to claim ~~37~~ 36 and wherein said lumen of said fluid conduit has a circular cross section having a diameter in the range of 50-150 micrometers.

39. (Previously Presented) A method according to claim 36 and also including providing a fluid reservoir in fluid communication with said specimen enclosure assembly.

40. (Previously Presented) A method according to claim 39 and wherein said fluid reservoir comprises at least one fluid channel in fluid communication with said fluid conduit and a passageway formed in said fluid reservoir for communicating with said volume outside said specimen enclosure assembly.

41. (Previously Presented) A method according to claim 40 and wherein said fluid channel of said fluid reservoir comprises at least one tube.

42. (Previously Presented) A method according to claim 40 and wherein said passageway formed in said fluid reservoir comprises a fluid conduit having a lumen whose cross section is sufficiently small so as to maintain a pressure, which exceeds said vapor pressure of said sample in said specimen placement volume and is greater than said pressure of a volume outside said specimen enclosure assembly and said fluid reservoir.

43. (Previously Presented) A method according to claim 40 and wherein said passageway formed in said fluid reservoir also comprises a tube with a circular cross section having a diameter in the range of 50-150 micrometers.

44. (Previously Presented) A method according to claim 34 and also comprising providing a fluid ingress and egress assembly communicating with said enclosed specimen placement volume for permitting supply and removal of fluid from said enclosed specimen placement volume.

45. (Previously Presented) A method according to claim 44 and wherein said fluid ingress and egress assembly comprises at least two fluid conduits.

46. (Currently Amended) A method according to claim 45 and wherein at least one of said at least ~~one~~ two fluid ~~conduit~~ conduits of said fluid ingress and egress assembly comprises at least ~~two tubes~~ one tube communicating with said specimen placement volume.